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.. REPORT ..

ON THE

WATER COMMITTEE

OF THE

CITY OF PORTLAND, OREGON.

.. BY THE ..

Committee on Other Commissions

TO THE

Committee of One Hundred.

PORTLAND, OREGON:
F. W. BATES AND COMPANY, PRINTERS,
1894.

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REPORT ON THE WATER COMMITTEE

OF THE

CITY OF PORTLAND,

BY THE

COMMITTEE ON OTHER COMMISSIONS

TO THE

COMMITTEE OF ONE HUNDRED.

To the Executive Committee of the Committee of One Hundred :

GENTLEMEN—Your committee beg leave to present this as their report on the Water Committee, and while it may not be as full as desired, or go into details to the extent some might wish, we hope that the report in general will serve a useful purpose in placing before the public a statement of the work done by the Water Committee.

The subject naturally divides itself into several heads :

(1) The creation of the committee and the law under which it exists.

(2) Finance.

(3) Operation.

(4) Construction.

THE CREATION OF THE COMMITTEE, ETC.

The supplying of water for the City of Portland prior to the purchase of the plant by the city was done by the Portland Water Company, a private corporation. For some time there had been more or less agitation of the question of the desirability of the city owning its

own plant. This sentiment was finally crystalized into a law at a special session of the legislature in the year 1885.

On November 25, 1885, by an Act Amending an Act incorporating the City of Portland, approved October 24, 1882, the City of Portland was authorized and empowered to construct or purchase, keep, conduct and maintain water works therein, of a character and capacity sufficient to furnish the city and the inhabitants thereof with an abundance of good, pure and wholesome water for all uses and purposes necessary for the comfort and convenience and well-being of the same, and to that end might acquire by purchase, or otherwise, and own and possess such real and personal property within and without the limits of the city as in the judgment of the persons therein authorized to construct, purchase, conduct and maintain the same, might be deemed necessary and convenient, and for such purpose might also issue bonds and dispose of the same as therein provided.

The power and authority given the city by the preceding section was delegated to the following named taxpayers and *bona fide* residents of the city, namely: John Gates, F. C. Smith, C. H. Lewis, Henry Failing, W. S. Ladd, Frank Dekum, L. Fleischer, H. W. Corbett, W. K. Smith, J. Loewenberg, S. G. Reed, R. B. Knapp, L. Therkelson, Thomas M. Richardson and A. H. Johnson, who were to be styled collectively "The Water Committee." This committee was compelled to organize within thirty days from the time the Act went into effect by the election of a presiding officer from their number who was to be styled "The Chairman of the Committee," and a clerk who was to be styled "The Clerk of the Committee."

By Section 145 of this Act, the committee were authorized to fill any vacancy that might occur in their body by death, resignation, removal from the city, or

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otherwise, by the appointment of a person to be a member thereof, who is a *bona fide* resident and taxpayer of the city. Nine of the committee constituted a quorum for the purpose of organization as well as the transaction of all other business. The committee were also directed to appoint a treasurer who should give a bond in such sum as might be required, and money was to be paid out on the order of the chairman, countersigned by the clerk of the committee, and not otherwise. The committee could also provide a compensation for the clerk and treasurer. They were also required to meet at least once a month for the transaction of business.

Under Section 153 the committee was authorized to issue and dispose of the bonds of the city of the denomination of from \$100 to \$1,000, as the purchaser might desire, with interest coupons attached, the par value of which should not exceed the sum of \$700,000. These bonds were to run thirty years, and were payable in gold coin of the United States, with interest at the rate of five per cent. per annum, payable half-yearly.

Section 154 provides that as soon as the water works were ready for use, that there should be selected five persons for the purpose of maintaining and conducting said water works, who shall be styled individually, "Water Commissioners," and collectively "The Water Commission," and the power and authority given the city by the Act was afterwards to be exercised by this commission. The commissioners are to be selected in the first instance by the committee from their own number for the several terms of two, four, six, eight and ten years. In case a sufficient number do not consent to serve as such commissioners, the remainder might be selected from the resident taxpayers of the city, and thereafter the commissioners were to be appointed by the Governor of the state from such taxpayers for terms of ten years, unless it was for the

filling of a vacancy, when such vacancy would be filled until the expiration of the term. Three of these commissioners constitute a quorum for the transaction of business. They are also to elect a chairman and a clerk to have the same powers and the same duties as the chairman and the clerk of the committee. Provision is made also for their meeting once a month.

After this commission is elected and organized, then the Water Committee is required to turn over the water works and all property, books, papers and accounts connected therewith or appertaining thereto. The commission then take possession and charge of, and manage, conduct and maintain the same. They have authority to alter, improve and extend the work from time to time, when the receipts from the works are sufficient to defray the expenses thereof, as the growth of the city and the wants and convenience of the inhabitants thereof may require. The committee may turn over the completed portion or portions of such work to the commission before the final completion thereof, and as fast as it is so turned over to the commission it must accept the same and conduct and maintain it accordingly. The money collected or received by the commission for the use or consumption of water shall be deposited with the treasurer of the city who shall keep the same separate and apart from the other funds of the city, paying it out on the order of the chairman of the commission, countersigned by the clerk, and to the holder of any overdue interest coupons of the bonds aforesaid, upon the presentation and surrender thereof, and not otherwise.

Section 159 gives the commission full power to manage, control and handle the water works.

Section 160 provides that annually, before the first day of January of each year, the commission shall make a written estimate of the probable expense of maintaining and conducting the water works during the

ensuing year, and also the cost of any contemplated alteration, etc., and thereupon ascertain and prescribe, as nearly as it conveniently can, a water rate for such year as will insure a sufficient income from the sale of water to pay such expenses and costs, together with one year's interest on the bonds then issued and outstanding.

Section 161 provides that after the expiration of five years from the selection of the commission, a sum equal to one *per centum* on the par value of the bonds, then issued and outstanding, may be annually estimated for in fixing the water rates in addition to the expenses, costs and interest, and collected as a part thereof, which sum, when so collected, shall be kept invested under the direction of the commission as a sinking fund for the payment and redemption of the said bonds.

Section 162 provides for filing the quarterly statement of receipts and disbursements with the city auditor and clerk, and the preservation and publication of the same, and also, as part of its last quarterly report of each year, an inventory or statement of the property, implements or material in its possession or control appertaining to the water works, together with its condition and proximate value.

Section 163 provides for the salary of the five commissioners, which shall be \$500 a year, payable quarterly.

Section 164 defines the eligibility of persons to become members, and defines a taxpayer within the meaning of the Act to be one who pays a tax of not less than \$25 per year, and whenever any member of the committee or commission shall fail to pay such tax to the city for one year, he shall cease to be a member thereof and his place shall be deemed vacant and may be filled accordingly.

Section 165 exempts from taxation the bonds issued under this Act.

The first change made in the original Act was on February 11, 1891.

Under this Act, filed in the office of the Secretary of State, February 11, 1891, the Water Committee of the City of Portland were authorized to bring the water of Bull Run, its branches and tributaries, by gravity to Portland in sufficient quantity to supply the city and inhabitants thereof, as well as the places and people along or in the vicinity of the line of the pipes, conduit or aqueducts that may be constructed or used for such purpose. Section 2 of this Act provided that for the purpose of carrying the Act into effect the committee were authorized to issue and dispose of, from time to time, bonds in addition to those authorized by Section 153 of the Act of 1885, of the value of \$2,500,000, which bonds in all particulars *except as to exemption from taxation*, shall conform to and have the same force and effect as those authorized by said Act of 1885, and shall be designated as the issue of 1891. Section 3 provided that the payment of the interest on the bonds issued under this Act, as well as the Act of 1885, which might become due during the construction of the water works provided for and within one year after the completion and delivery to the water commission, might be met out of the proceeds of the sale of said bonds and during the construction and until such delivery the committee shall have the power and authority conferred on such commission by Section 159 of the Act of 1885.

Section 161 of the Act of 1885, was amended so that after the expiration of five years from the selection of said commission, a sum not exceeding two per cent. of the par value of the bonds issued under this Act and the Act of 1885, then outstanding, may be estimated for in fixing the water rate in addition to the expense, cost and interest to be collected as a part thereof. This sum when collected shall constitute a sinking fund to be used and applied under the direction of the commission—

First : To the purchase of any valid bonds or indebtedness issued by, or due from, the city.

Second : To the purchase of any of the bonds issued under the Act of 1885, or this Act, at a premium not to exceed ten per cent., or,

Third : To the payment and reduction of such of the bonds issued under this Act as may be selected by lot on the first day of January of any year, at a premium not to exceed ten per cent. Further, providing, that all bonds purchased and redeemed under the second and third sub-divisions of this section shall be forthwith cancelled and deposited with the auditor of the city.

On April 27, 1888, John Gates died, and on October 8, 1889, F. C. Smith resigned. On November 5, 1889, the committee filled these vacancies by the election of C. A. Dolph and C. E. Sitton. Mr. Sitton died in 1890.

Further changes were made in the law in 1891, as follows :

Under an Act filed in the office of the Secretary of State, February 19, 1891, being the Act creating the consolidated City of Portland, East Portland and Albina, Chapter 12, treats of the question of water works. Section 143 is practically the same as Section 142 of the original Act.

Section 144 is practically the same as 143, except that the following persons are named as the committee : Geo. P. Frank, C. H. Lewis, Henry Failing, W. S. Ladd, Frank Dekum, L. Fleischner, H. W. Corbett, W. K. Smith, J. Loewenberg, S. G. Reed, R. B. Knapp, L. Therkelson, Thomas M. Richardson, A. H. Johnson, C. H. Hill, C. A. Dolph and C. H. Raffety. Mr. Raffety and Mr. Hill were named with the *proviso* that if the Act be rejected by the City of East Portland, Mr. Raffety was not to be a member, and that if the Act be rejected by the City of Albina, Mr. Hill was not to be a member.

Section 145 is practically identical with Section 144 of the old Act.

Section 146 provides that the committee shall fill the first three vacancies that may occur in the body by the appointment of three persons to be members thereof who are *bona fide* residents and taxpayers of the city east of the Willamette river.

Sections 147, 148, 149, 150, 151, 152 and 153 are practically the same as the sections of the Act of 1885, from 146 to 152, inclusive.

Section 154 of the Act of 1891, provides for the issuance and disposition of bonds of the denomination of from \$100 to \$1,000, payable in thirty years from the date, in gold coin, with interest at the rate of five per cent. per annum, payable semi-annually, provided that the whole amount of bonds issued by such committee shall never exceed the sum of \$3,500,000, including the amount which shall have been issued by the present Water Committee of the City of Portland at the time the Act shall take effect.

Section 155 is the same as 154.

Section 156 of the new Act provides that the commissioners shall be selected in the first instance by the committee from their own number for the several terms of two, four, six, eight and ten years, but in case a sufficient number thereof do not consent to serve as such commissioners, the remainder may be selected from the resident taxpayers elected from the qualified voters of the city.

Sections 157, 158, 159, 160 and 161 are practically the same as the old law from Section 156 to 160 inclusive.

Section 162 provides that after the expiration of five years from the selection of said commission, a sum not exceeding two *per centum* of the par value of the bonds issued under this Act and under the Act of 1885, which created the Water Committee of the City of Portland,

then outstanding, may be annually estimated for in fixing the water rate in addition to the expense, cost and interest aforesaid, and be collected as a part thereof, which sum, when so collected, shall constitute a sinking fund to be used and applied under the direction of said commission—

First: In the purchase of any valid bonds issued by, or due from, the city.

Second: To the purchase of any bonds issued under the Act of 1885, or this Act, at a premium not to exceed ten per cent.

Third: To the payment and redemption of all such of the bonds issued under this Act as may be selected by lot on the first day of January of any year at a premium not to exceed ten *per centum*.

All bonds purchased or redeemed under the second and third sub-divisions of this section shall be forthwith cancelled and deposited with the auditor of the city.

Sections 163, 164 and 165 are practically the same as Sections 162, 163 and 164.

Section 166 provides that all bonds issued and disposed of under this Act shall be subject to taxation.

By an Act filed in the office of the Secretary of State, February 23, 1893, the charter of the City of Portland was again changed, and under Chapter 12 the subject of water works was treated.

Section 145 is the same as 143 of the law of 1891.

Section 146 creates the following as the committee : Geo. P. Frank, C. H. Lewis, Henry Failing, Frank Dekum, L. Fleischner, H. W. Corbett, Charles H. Carey, J. Loewenberg, S. G. Reed, R. B. Knapp, L. Therkelson, H. W. Scott, A. H. Johnson, C. H. Hill, C. A. Dolph and C. H. Raffety.

The next section which makes any material change is Section 155, which provides for the issuance of the bonds, payable in thirty years, with five per cent. interest, semi-annually, in gold coin, limiting the amount to

\$3,200,000 including the amount which shall have been issued by the present Water Committee of the City of Portland at the time this Act takes effect.

Section 166 makes a residence qualification necessary for eligibility as a commissioner, the time being fixed at five years.

The rest of the law is practically the same.

Of the committee above named, W. S. Ladd died on January 6, 1893 ; A. H. Johnson, April 16, 1894, and Frank Dekum, October, 19, 1894. The vacancies thus created have never been filled.

The following named persons have been the officers of the committee since its organization :

Chairman : HENRY FAILING.

Treasurer : C. H. LEWIS.

Clerk : PHILIP C. SCHUYLER, until his death in October, 1889. On November 5, 1889, Frank T. Dodge, the accountant of the City Water Works office, was elected as clerk, and has since that time performed the duties of both offices.

The treasurer is required to give a bond in the amount of \$300,000, and the clerk \$10,000.

A sub-committee has particular charge of the construction. Until his death W. S. Ladd was chairman of this committee, and on his death Mr. Frank was appointed to fill the vacancy. The following have been members of this committee : W. S. Ladd, Henry Failing, T. M. Richardson, W. K. Smith, J. Loewenberg, Frank Dekum and Geo. P. Frank. The present members are : Geo. P. Frank, Henry Failing, J. Loewenberg, C. A. Dolph and L. Therkelson.

While it is a little out of order, we will set out here the regulations regarding the employment of engineers, superintendents and laborers.

The engineers and superintendents of concrete and asphalt work were employed by the committee direct.

It also fixes all wages. The foremen and laborers are employed and discharged by the chief engineer.

The following persons constitute the engineer corps :

ISAAC W. SMITH, <i>Chief Engineer</i> . Appointed January 1, 1887. Salary, per month.....	\$400.00
D. D. CLARKE, <i>Principal Assistant Engineer</i> . Salary, per month.....	200.00
JAMES D. SCHUYLER, <i>Consulting Engineer Reservoir Construction</i> . Salary, \$5,000 for six months' services during the year 1894, and \$2,000 for services until completion of the reservoirs now being constructed, and for preparing plans and estimates for the Portland Heights reservoirs.....	
C. E. OLIVER, <i>Assistant Engineer Reservoir Construction</i> . Salary, per month.....	150.00
J. Q. JAMIESON, <i>Assistant Engineer</i> . Salary, per month.....	125.00
J. F. CASE, <i>Assistant Engineer</i> . Salary, per month.....	125.00
EMERY OLIVER, <i>Assistant Engineer</i> . Salary, per month.....	125.00
E. E. COOPER, <i>Assistant Engineer</i> . Salary, per month.....	125.00
F. H. YOUNG, <i>Assistant Engineer</i> . Salary, per month.....	100.00

CONSTRUCTION.

R. KEATING, <i>Superintendent of Concrete Work</i> , per day.....	\$7.50
J. S. JACKSON, <i>Superintendent of Asphalt Work</i> , per day.....	7.50
J. H. ATKINSON, <i>Foreman of Carpenters</i> , per day.....	4.00

PAY OF MEN.

Carpenters, per day.....	\$3.00
Asphalt laborers, per day.....	2.00
Bricklayers, per day.....	2.35
Brick laborers, per day.....	2.00
Concrete finishers, per day.....	3.00
Concrete laborers, per day.....	2.00
Common laborers, per day.....	1.75
Two-horse wagon and driver, per day.....	4.50
Water boys, per day.....	1.00

The foregoing covers generally the formation and government of the committee, so far as its ministerial work is concerned. Necessarily, the various parts of the work are all a part of a harmonious whole, and our division is arbitrary and for convenience hereafter, should information be desired on any particular portion of the subject.

FINANCES.

This subject will be divided into two heads — Bonds and receipts from sales of water.

BONDS.

By the Act of 1885, the issuance of bonds to the amount of \$700,000 was authorized. These were non-taxable. The Act of 1893 authorized \$2,500,000 additional, and were not exempt from taxation. All of these are thirty-year five per cent. gold bonds, with interest payable semi-annually. Of these, bonds have been issued, dated and maturing as follows :

January 1, 1887, maturing January 1, 1917.	\$ 700,000
July 1, 1893, maturing July 1, 1923.....	1,900,000
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	\$2,600,000

All bonds were sold by public bidding after due advertisement in both local and eastern papers. Of the series July 1, 1893, there remains unsold \$600,000, which we are informed will yield sufficient money to complete the work, and it is possible the full amount will not be required. We feel, therefore, safe in saying, as we are advised, that there will be no necessity for any further issue of bonds than those now authorized.

The dates on which bonds were sold, their face value, premium, discount, etc., is set out in the following table :

DATE.	FACE VALUE	PREMIUM.	DISCT.	TOT'L REALIZ'D
Dec. 31, '86	\$500,000	\$39,300.00		\$539,300.00
Jan. 17, '89	100,000	5,908.20		105,908.20
Jan. 2, '90	50,000	4,500.00		54,500.00
June 16, '90	50,000	5,250.00		55,250.00
July 20, '93	50,000		par	50,000.00
Aug. 7, '93	15,000		par	15,000.00
Aug. 12, '93	50,000		par	50,000.00
Aug. 23, '93	15,000		par	15,000.00
Aug. 30, '93	1,000		par	1,000.00
Aug. 31, '93	7,000		par	7,000.00
Sept. 1, '93	12,000		par	12,000.00
Sept. 20, '93	100,000		\$2,500	97,500.00
Oct. 20, '93	25,000		625	24,375.00
Nov. 14, '93	50,000		1,250	48,750.00
Nov. 18, '93	25,000		625	24,375.00
Dec. 1, '93	50,000		1,250	48,750.00
Dec. 19, '93	50,000		1,250	48,750.00
Jan. 18, '94	50,000		1,250	48,750.00
April 26, '94	250,000	21,562.50		271,562.50
June 1, '94	250,000	23,900.00		273,900.00
Aug. 15, '94	200,000	19,780.00		219,780.00
Sept. 15, '94	300,000	29,670.00		329,670.00
Oct. 15, '94	400,000	42,080.00		442,080.00
	\$2,600,000	\$191,950.70	\$8,750	\$2,783,200.70

From the foregoing it will be observed that of the bonds sold during the crisis of 1893, \$150,000 sold at par and \$350,000 sold for a discount of \$8,750, the balance bringing a premium.

RECEIPTS FROM SALES OF WATER.

(Exclusive of \$69,757.45 due from the city for the years 1891, 1892 and 1893.)

	CASH RECEIPTS.	OPERATING EXPENSES AND REPAIRS.
1887.....	\$ 97,502.71	\$47,000.77
1888.....	113,692.06	54,792.44
1889.....	148,106.31	51,407.17
1890.....	181,310.40	71,496.85
1891.....	214,217.95	63,993.28
1892.....	237,300.85	58,832.27
1893	227,500.82	63,357.32
	\$1,219,631.10	\$410,880.10

Total cash receipts.....	\$1,219,631.10
“ operating expenses	\$410,880.10
Fuel, etc., on hand Dec. 31, '93	16,019.39 426,899.49
Income from City Water Works	\$ 792,731.61

The receipts and disbursements for the year 1894 to October 1, are as follows :

Receipts.....	\$158,695.60
Operating Expenses and Repairs....	41,430.04

The balance sheet of December 31, 1893, shows that the “Income from City Water Works” to that date amounted to \$792,731.61. Of that sum \$224,199.50 was expended in paying interest on bonds, and \$273,187.13 for additional pumps and main from Palantine, the remainder, \$295,344.98 went into construction account and for the extension of mains for the distribution system in the city.

The total amount received by the city for seven years ending December 31, 1893, was the sum of.....	\$1,219,631.10
Operating expenses and repairs	\$410,880.10
Interest on bonds.....	224,199.50 635,079.60
Expended in improvements, etc.,.....	\$ 584,551.50

To October 1, 1894, the sum of \$2,113,157.20 had been expended in construction, which sum includes \$346,384.13 expended during the seven years ending December 31, 1893, in extending the mains for the distribution in the city.

The total investment of the city in water plant on completion of present system, including original purchase December 31, 1886, is, as nearly as can be estimated, as follows :

Amount to December 31, 1893,	\$1,723,969.64
January 1, 1894, to September 30, 1894.	1,124,051.02
	\$2,848,020.66
Estimate of amount necessary to complete works, excepting supply for Portland Heights,	670,876.00
Total.....	\$3,518,896.66
Estimated total bonded indebtedness after completion of works.....	\$3,000,000.00

The amount of cash in hands of treasurer on the first of January and the first of July, of each year, was as follows :

Jan. 1, 1887.....	\$ 54,212.32
July 1, 1887.....	9,025.14
Jan. 1, 1888.....	22,300.50
July 1, 1888.....	338.34
Jan. 1, 1889.....	1,005.24
July 1, 1889.....	13,532.81
Jan. 1, 1890.....	14,191.08
July 1, 1890.....	33,188.37
Jan. 1, 1891, <i>Committee owed Treasurer.</i>	10,180.45
July 1, 1891.....	3,159.28
Jan. 1, 1892.....	3,093.17
July 1, 1892.....	102.19
Jan. 1, 1893.....	4.74
July 1, 1893.....	967.53
Jan. 1, 1894.....	42,020.67
July 1, 1894.....	265,102.69

The foregoing table speaks more forcibly than words as to the scrupulous care with which the money was handled. It is self-evident that bonds were sold only when absolutely necessary to carry on the work. The cash on hand during the trying times of the summer of 1893, show to what extent the committee guarded these funds and fulfilled its trust. On January, 1891, the committee actually owed the treasurer \$10,180.45.

The provision for the redemption of bonds has been set out heretofore herein. At the present time there is no money in the sinking fund, as the time for the commencement of providing such fund does not begin until five years after the selection of the "commission."

Attached to the report and marked exhibit "A" will be found a "Statement of all the Receipts, Earnings and Disbursements by the Water Committee of the City of Portland, Oregon, and the Sub-Committee on Water Works, Operating the Works from November 25, 1885, when the Committee was Appointed by Act of Legislature until December 31, 1893."

Closely connected with the finances is that of the unsettled question of the city paying for its water, which

has for a long time been a source of more or less friction between the "city council" and "committee." After very careful consideration of the matter we concur in the views of the Water Committee, setting forth the reason for so doing hereafter without elaborating on the subject. In order to understand the question a statement of fact is necessary.

The monthly charges against the city are as follows :

Fire Department —

260 fire hydrants, at \$5.....	\$1,300 00	
71 cisterns, at \$5	355 00	
11 engine houses.....	53 25	\$1,708 25

Police Department —

1 police station	\$ 12 35	
1 elevator	13 00	\$25 35

City Offices —

Second and Oak streets . . .		\$15 00
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City Stables —

Regular rates		\$20 25
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\$1,768 85

In addition to the above the water supplied the city park and to street sprinklers is charged for per following rates and rules.

For water supplied by meter, except for elevators, the rates shall be as follows :

For quantities up to 25,000 gallons in any one month at the rate of 30 cents for each 1,000 gallons.

For the quantity so used in any one month exceeding 5,000 gallons, and up to 50,000 gallons, at the rate of 25 cents for each 1,000 gallons.

For the quantity so used in any one month exceeding 50,000 gallons, and up to 100,000 gallons, at the rate of 20 cents for each 1,000 gallons.

For the quantity so used in any one month exceeding 100,000 gallons and up to 300,000 gallons, at the rate of 15 cents for each 1,000 gallons.

For the quantity so used in any one month exceeding 300,000 gallons, at the rate of 10 cents for each 1000 gallons.

From January 1, 1887, the date when the city purchased the water works, until December 31, 1892, the

city paid for all water used for street sprinkling and the park at the same meter rates as other consumers, amounting to about \$2,500 each summer, and until December 31, 1890, also paid \$200 per month for water for the fire department and other municipal purposes. This \$200 was a continuation of the old rate charged by the Portland Water Company at a time when the city was small, when there were but few hydrants and the pressure not sufficient for fire protection, and when the water for the council chamber was paid for by the owner of the building.

On December 30, 1890, the "committee" notified the common council that the rates for water (other than for street sprinkling and city park) would be raised from \$200 to \$2,000 per month after January 1, 1891. During 1891 and 1892 the city paid for the water for street sprinkling and city park, \$5,250.95, but paid nothing on the monthly charge of \$2,000 for water for other purposes.

Section 161 gives the committee power to establish rates for "*the use and consumption of water by the city and inhabitants thereof,*" etc., etc.

Section 162 requires it to annually, before the first day of January, make a written estimate of the probable expense of maintaining and conducting the works during the ensuing year, and also cost of alteration, improvements, etc., and therefrom "ascertain and prescribe as nearly as it can conveniently a water rate for such year as will insure a sufficient income from the sale of water to pay such expenses and costs together with one year's interest on the bonds aforesaid then issued and outstanding."

On April 1, 1887, three months after the purchase of the works, the committee reduced the rates for each family of six persons or less, from \$1.50 to 75 cents, and the rates for baths, water closets, hose, etc., in proportion.

On December 12, 1892, the committee, as required by law, made a written estimate for 1893, as follows :

Deficiency at close of year 1892, estimated.....	\$ 12,000
Probable expense of maintaining and conducting works.....	65,000
Sites for reservoirs and building high service reservoir.....	100,000
Extending mains, distributing system, city.....	29,000
Interest on \$700,000 bonds at 5 per cent.....	35,000
	<u>\$241,000</u>
Receipts for water at present rates.....	<u>236,500</u>
Probable deficiency at end of 1893.....	\$ 4,500

It was also voted that instead of \$2,000 per month the charge against the city should be, per month, according to rates hereinbefore named.

It was also voted that if the city would pay according to the said rates, the committee would then be able to reduce the base rate of every family from 75 cents, the present rate, to 50 cents per month, which would probably reduce the monthly receipts about \$1,800.

On December 27, 1892, a committee of three went before the common council and presented the matter to it, explaining the propriety and necessity of the city paying for water.

On December 30, 1892, the committee gave written notice to the common council, the fire and police commissioners, that the rates hereinbefore named would be charged to the city.

During the year 1893 nothing was paid for water furnished for the fire department, city park or street sprinkling, and only \$719.60 for the police station, city offices and city stables.

During this year the police department is the only branch of the city government which has paid, and it paid \$228.15, the full amount due from it.

The books show the city owed for water on the first day of October, 1894, the sum of \$88,169.60.

This is, in brief, a history of the controversy. Some principle ought to be the base for all charges for water, and we submit that the furnishing of this necessity to the actual user of the same for household purposes at the lowest possible rate, is the true rule. Ordinarily, the landlord compels the tenant to pay for the water, if not directly, then indirectly. The land owner *must* have water, or his property is of but little value. Large tracts of vacant land have been made available only by the extension of the city mains. Stores are sought where fire protection is ample. Insurance is saved both to tenant and landlord. Streets must be watered, sewers flushed, and it is put to many uses known to every one for the general good of the public. We cannot have something for nothing. This will probably be conceded. Therefore, how is this use to be paid for? It is grossly unjust, inequitable and unconscionable that the actual consumers, the great majority of whom are tenants and poor people, should pay to protect the great buildings and wholesale stocks of wealthy firms and individuals; should pay for having the streets watered where the wealth and business of the city is concentrated, and absolutely get none but the incidental benefit of being more comfortable when in that particular locality.

It is not only illogical, but unreasonable, to say it is taking money out of one pocket and putting it in another. Certainly, to a tenant who don't own any property, it would be a saving to pay fifty cents a month instead of seventy-five cents, and a man owning his own home could much better afford to pay the very small increase in his tax, and get the reduction in rates, than to let the great bulk of the wealth of the city go free, as it now does. Take from the center of Stark street to the center of Davis, north, and from the center of Front to the center of First, west. In these blocks will be found millions of property protected, yes,

doubly protected against fire. The buildings are worth many millions and are well rented. Every tenant, we apprehend, pays for the water he uses, and not the landlord; both tenant and landlord by reason of the supply furnished get excellent protection against fire. Including elevators and income from all sources, the water rent paid in this district per month amounts to a total of \$398.95. For November, 1894, there was paid \$165.10 for water rates, and \$233.85 for elevators, the rates for elevators being :

Hydraulic Elevators—

Sidewalks, each.....	\$3.00 to \$ 5.00
All others, each, basis rate.....	10.00

And, in addition, ten cents per thousand gallons used in any one month up to one million gallons, and eight cents per thousand for water so used in excess of one million gallons.

Should the use of water be discontinued and the elevators be operated by steam or electric power, the water pipes may remain in connection, for use in case of accident, by the payment of five dollars per month in advance, provided that the payment, while using the water, shall not be less than \$10 for a period of one month, and in addition ten cents per thousand gallons for the water used.

Much protection, otherwise unnecessary, is required for wharves which pay but little or nothing. Is this right?

These conclusions are based, of course, upon the theory that the entire city will be supplied by the water commission and not by separate water works, and that the entire city will have both protection from fire and an adequate supply for household purposes.

After all, this is a necessary result, in all probability, of having our city government cut up into sections, each more or less independent of the other, and each run without regard to the common interest.

We are informed that in almost all cities owning their own water works, from fifteen to forty per cent. of the gross earnings is paid from the general fund by a tax on the property protected from fire, and benefitted by the extension of pipes in sparsely settled portions of the city, so there is nothing new or experimental in the proposition.

In considering a reduction in the comparatively high rates now charged, the fact of the city declining to take any of the burden, must be borne in mind, and the payment of all the interest on the bonds, and the greater portion of the expenses incurred, *solely* for the benefit and protection of property, has been thrown on persons many of whom have no direct interest in the property, its care or preservation, and the council's action imposes each year an unnecessary burden on those who can ill afford to bear it, and prevents a reduction the committee would have been glad and desired to make some time ago. The committee has filed the reports required by law with the city auditor and clerk, in whose custody they now are.

OPERATING DEPARTMENT.

The first meeting of the committee was held December 8, 1885, at the office of Ladd & Tilton, in the City of Portland. H. W. Corbett acted as temporary chairman. The committee organized by electing Henry Failing, chairman ; C. H. Lewis, treasurer, and Phillip C. Schuyler, clerk. A sub-committee of five and the chairman was appointed to prepare and present plans for future action. Besides Mr. Failing, this committee was composed of Messrs. Corbett, Gates, Ladd, Richardson and Reed.

On December 16, 1885, a resolution was adopted notifying all persons or corporations owning or controlling any water source or supply, or proposing to construct water works, that the committee was ready to

receive propositions. On December 24, Isaac W. Smith was appointed engineer to appraise the value of the water works and other property offered for sale. Various propositions were received, amongst which was one from John Burke offering to duplicate the plant of the Portland Water Company for \$358,000.

A. G. Cunningham offered to sell 3189 acres lying along the banks of Bull Run river, with riparian rights, for \$125,000, \$25,000 in cash, balance in five equal payments bearing interest at the rate of eight per cent. per annum.

The Crystal Springs Water Company made several propositions both of construction and sale.

P. F. Morey offered to sell certain riparian rights on Bull Run river, and to deliver 12,000,000 gallons a day for \$600,000 ; or to deliver 25,000,000 gallons a day for \$750,000. In case the second proposition was accepted he was to have the right to use all water not required for domestic and city purposes, and would pay \$12,000 a year for ten years for such privilege.

Some surveying work was done in connection with the Bull Run supply. It was rumored that the scheme was impracticable. The impression thus created the committee took no pains to correct, as it was deemed unwise to disclose the plans until they got the source of supply, right-of-way, etc. During 1886 the constitutionality of the Act creating the committee was tested in the suit of *David et al. v. The Committee*, and the Act sustained. On December 8, 1886, the Portland Water Company sold its entire plant to the city for \$461,676, and on January 1, 1887, the committee took possession. The property acquired by the city by this purchase, was as follows :

The Palatine pumping station, five miles above the city on the White House road, including two five-million gallons Worthington pumps and ten acres of land adjoining.

The high service pumping station at the corner of Seventh and Lincoln streets, including one small half-million gallon pump.

The old round house station at the foot of Lincoln street, including one three-million gallon pump ; a one million gallon pump, and a half-acre of land along the river front. These pumps have not been used for many years, and have, with all other property, been removed from the pumping station.

A low service reservoir, capacity two million gallons ; occupying the block bounded by Lincoln, Grant, Sixth and Seventh streets, from which the water is pumped for the high service system.

A high service reservoir, capacity about 250,000 gallons, occupying a block of land bounded by Eighth and Clifton streets and the hills back of Eighth and Clifton. This reservoir is not at a sufficient height to afford the required pressure, and has not been used during the past two or three years.

A reservoir at about ninety feet above the base of the city grades at the northwest corner of Fourth and Market streets, occupying a quarter of a block of land. This is too low to afford sufficient pressure, and is now used for a store house, stables and residence of employees.

Water supply from Caruthers and Balch creeks. This is no longer used as the supply has greatly diminished, and the water is not suitable for consumption.

Distribution pipes and mains, 27.413 miles of the dimensions stated in the table hereinafter set out.

The committee, after the purchase of the works, did not relax its effort to seek another and purer supply, although what they did was done very quietly. We think we are safe in saying the Bull Run project was the only proposition to which really serious thought was given. At any rate a gravity system seems to have been the generally accepted one, no matter where the supply

might come from. Considerable money was expended in purchasing rights-of-way, in engineering expenses, etc.

On May 13, 1887, Isaac W. Smith was appointed engineer and superintendent, at a salary of \$250 per month. On August 3, 1887, the committee decided to lay mains in every graded street. On November 2, 1887, the Cunningham rights were purchased for \$21,181.19. This purchase, with the creation of the timber reservation by the United States, and previously acquired rights, gave the city an ideal water supply.

The receipts the first year were \$97,502.71. In 1892 the receipts were \$237,300.85, and in 1893, \$227,500.82.

On April 1, 1887, a reduction in rates of about fifty per cent. was made to families. Other charges in connection with meter charges and rates looking to the more economical use of water were made, but no other general reduction has been effected.

In order to get a fair idea of what has been done in the operating department, a few comparative tables are set out :

TABLE 1.

TOTAL MILES PIPE LAID TO DECEMBER 31, 1893.

DIAMETER INCHES.	BY PORTLAND WATER CO. TO DEC. 31, 1886.	BY WATER COMMITTEE TO DEC. 31, 1893.	CAST IRON.	WROUGHT IRON.	TOTAL.
30 inches	4.150			4.150	4.150
24 "	.706	5.904	1.980	4.630	6.610
20 "	.270	2.450	2.720		2.720
18 "	.060			.060	.060
16 "	.654	.866	1.520		1.520
14 "	1.793		1.793		1.793
12 "	.699	2.487	3.186		3.186
10 "	.211	6.798	7.009		7.009
8 "		2.349	2.349		2.349
6 "	9.370	16.962	26.332		26.332
4 "	9.500	6.866	16.366		16.366
3 "		.246	.246		.246
	27.413	44.928	63.501	8.840	72.341

In addition to the above mains and pipes laid, the committee erected one twelve-million gallon pump at the Palatine pumping station.

Two pumps, with a combined capacity of 4,000,000 gallons a day, erected at the high service pumping station at the corner of Seventh and Lincoln streets. These are all high duty Holly pumps, adapted to pumping into the reservoirs or directly into the mains, and using not more than sixty per cent. of the fuel required for the old Worthington low duty pumps.

The cost of the original plant, and of pumps, force mains and distribution pipes purchased, laid and erected since is as follows :

Paid Portland Water Company.....	\$ 461,676
Additional pumps and force mains from Palatine.....	\$273,187
Distribution pipes within the city... 346,384	\$ 619,571
	<u>\$1,081,247</u>

The additional pumps were necessary to meet the rapidly increasing demand for water for domestic and fire services, and have also been designed as a necessary part of the Bull Run gravity system, to be used in case it may be necessary to shut off the gravity supply in order to repair the mains.

Of the amount expended as above set out \$584,551 has been derived from the sales of water, and of this at least \$140,000 has been expended on large pipes designed to give a sufficient fire pressure, but from which little or no revenue is derived, a fact which again emphasizes the righteousness of the city at large paying a portion of the water charges.

A decided reduction in the cost of operating has been made.

For the year 1887 the cost of fuel per million gallons pumped at Palatine was.....	\$12.28
For the year 1893	5.04
Saving per million gallons.....	<u>\$ 7.24</u>

The saving on 3,641,000,000 gallons pumped during the year 1893 at \$7.24 was \$26,361. This reduction is due to the use of high duty pumps, and diminished resistance by the use of large mains, and the substitution of wood for coal as fuel. Excluding interest on bonds and fuel, the cost per million gallons for operating and repairs was \$15.92 in 1887 and \$13.64 in 1892.

Between 1887 and 1892 the following increases are noted :

Water pumped.....	80 per cent.
Gross earnings.....	160 per cent.
Pipe mileage.....	135 per cent.
Operating expenses, excluding fuel.....	23 per cent.

The pay roll of the office and cost of rent, fuel, light and stationery during the first nine months of 1894 has averaged \$542 per month. This does not include the pay of those employed in inspection, turning water off and on, repairs to mains, or other work outside of office.

The percentage, which all expenses of operating bear to the receipts, is as follows :

Gross earnings in 1893.....	\$249,228.82
Deduct balance due from city 1893.....	21,728.00
Gross receipts.....	\$227,500.82
Total operating expenses and cost of repairs.....	\$ 63,357.32
Percentage, 27.8.	\$164,143.50

TABLE B

Shows the annual consumption of water and for the average in August in each year, from 1886 to 1893 inclusive :

GALLONS PUMPED AT LOW SERVICE STATION AT PALATINE.

YEAR.	PER ANNUM.	PER DIEM DURING YEAR.		AVERAGE IN AUGUST.
		AVERAGE.	MAXIMUM.	
1886	1,431,000,000	3,920,000		4,670,000
1887	1,728,000,000	4,716,000	6,250,000	5,200,000
1888	2,153,000,000	5,900,000	8,579,000	6,730,000
1889	2,576,000,000	7,056,000	9,706,000	8,390,000
1890	3,431,000,000	9,415,000	11,200,000	10,663,000
1891	3,663,000,000	10,031,000	13,500,000	12,000,000
1892	3,116,000,000	8,537,000	14,800,000	10,652,000
1893	3,641,000,000	9,900,000	17,000,000	10,798,000

CAPACITY OF PUMPS.

The rate of supply during fires and during the summer months exceeds by at least fifty per cent. the average rate of consumption throughout the year, and duplicate pumps are necessary for use in case it may be necessary to shut down one of the pumps for repairs. Therefore, when there are no large storage reservoirs, the pumps must be designed for a much greater capacity than would be necessary for the average daily consumption during the year.

The efficiency of the pumps to produce the requisite pressure is reduced by the resistance due to friction in forcing the water through small pipes. To secure a sufficient fire pressure, the committee has, as above stated, expended at least \$140,000 in large mains.

Under these conditions the capacity of the pumps of the Portland Water Company may be placed at 5,000,000 gallons a day, and the maximum capacity for a limited time of 10,000,000 gallons. The pipes, however, were not of a sufficient size for over 4,000,000 gallons.

With the present plant of pumps and pipes the capacity is sufficient for an average daily supply of 12,000,000 gallons, which may be increased for a limited period to 18,000,000 gallons.

RATE OF CONSUMPTION.

In 1886 the daily average consumption was 3,921,000 gallons for the year, and 4,670,000 gallons for the month of August.

In 1893 it was 9,900,000 gallons *per diem* for the year, and 10,798,000 gallons *per diem* for the month of August.

The maximum during that month was 17,000,000 gallons, or about 340 gallons to the head of population.

We are informed that over one-half of this amount was wasted ; and even after a supply is brought in from Bull Run, this excessive waste must be checked by the use of meters.

In this connection we would say that on a basis of thirty gallons *per capita* per day, the present pipe line will furnish 800,000 people. In a report on the water works of Worcester, Mass., operated under a gravity system, and where meters are used, the report shows that in 1892, Worcester had a population of 88,000, and consumed that year 960,000,000 gallons of water, or at the rate of $29\frac{3}{8}$ gallons *per capita* per day. They had in use 9,522 meters which accounts for the small consumption. The wastage now going on cannot very well be stopped so long as river water is used, as the meters will not operate well. The new supply being free from sediment will avoid this trouble, and meters can be used to advantage and check the excessive waste.

COST OF PUMPING PER MILLION GALLONS.

We have already in this report set out the reduction made in the cost of pumping at Palatine by change of fuel between the beginning of 1887 and 1893. We now submit a comparative table showing further details made up for the years 1887 and 1892. The statement does not include the cost of pumping at the high service station :

Repairs, wages, oil, waste, etc.	1887, \$ 2.72; 1892, \$3.21
Fuel	“ 12.28; “ 5.26
	<u>\$15.00</u> <u>\$8.47</u>

The increase of expense for wages, repairs, etc., was due to the increased number of pumps to be kept in repair, and to extraordinary cost of repairs during the year 1892.

ESTIMATED NUMBER OF CONSUMERS.

The number of water consumers can be estimated only by the number of taps from which water is supplied :

January 1, 1887, estimated number of taps.....	5,000
Taps put in to January 1, 1894.....	3,909
	<u>8,909</u>

Estimated seven persons to the tap :

Number of consumers on January 1, 1887, was...	35,000
Number of consumers on January 1, 1894, was...	62,363

This estimate may be too small, but it is valuable for the purposes of comparison.

Gross earnings, operating expenses excluding interest on bonds and net earnings from 1887 to 1893, inclusive, and including \$69,757 charged to the city :

YEAR.	GROSS EARNINGS.	OPERATING EXPENSES.	NET EARNINGS.
1887.....	\$ 97,503	\$47,001	\$ 50,502
1888.....	113,692	54,792	58,900
1889.....	148,106	51,407	96,699
1890.....	181,310	71,497	109,813
1891.....	238,218	63,993	174,225
1892.....	261,330	58,832	202,498
1893.....	249,229	63,358	185,871
	<u>\$1,289,388</u>	<u>\$410,880</u>	<u>\$878,508</u>

It will be observed that the increase in earnings from 1887 to 1893, was 155.6 per cent., while the increase in operating expenses in the same time was 34 per cent. When the cost of increased pipe mileage, increased water consumption, new pumps, boilers and other machinery is considered, the rate of expense to receipts speaks well for the operating department.

There should be, however, some decrease in the expenses, the benefit of which should, and will at once be given the consumers. The saving will be in the cost of pumping, less the amount which will be required to keep the pumps in serviceable condition for use in

case of accident to the Bull Run pipe line, and the cost of repairs and supervision of the Bull Run water works. At the present rate of consumption (ten million gallons per day) the saving would be about \$30,000 per annum on the west side of the river, to which is to be added the cost of pumping on the east side.

When the consumption will have reached 25,000,000 gallons a day, the estimated capacity of the Bull Run pipes, the saving over and above the cost of pumping that amount would be about \$75,000 per annum. The supplying of the east side may make some changes from the above figures.

GENERAL DESCRIPTION OF WORKS FOR A GRAVITY SUPPLY FROM BULL RUN.

Bull Run is a mountain stream heading in a lake, fed by springs, about ten miles distant from Mt. Hood. Around this lake there is a high range of mountains between which and Mt. Hood there is a depression from which flow the headwaters of Hood and Sandy rivers. On account of this depression the snow water from Mt. Hood can flow into the headwaters of Bull Run only through springs and underground channels, and the stream flowing through rocky canyons with many falls and cascades is always clear even during the greatest floods. Between the head lake and the point at which the water is taken from the stream for the city supply, the country is rocky, mountainous and entirely unfit for cultivation or settlement, and in order to protect the waters from contamination, and to prevent the diminution of the discharge by the destruction of the forests, a tract of 200 square miles was reserved from settlement by proclamation of the President. We are informed, however, that within a year or two after the proclamation a township of land was surveyed for the benefit of six persons who alleged they had taken homestead

claims prior to the date of the reservation, and there is danger that tracts may be taken up for the timber, and thus the intention in reserving this land be defeated and the country denuded of its timber. The head works at which the water is diverted from the stream, are about 35 miles from the lake at the head of Bull Run, 24 miles from the reservoir on Mt. Tabor and 30 miles from the city park reservoirs, and are 716 feet above low water on the Willamette. The minimum discharge of the stream at the head works is about 60,000,000 gallons a day. Of this, 23,000,000 gallons will be delivered for the city supply now, and 30,000,000 gallons additional when needed. The head works, bridges, rock cuts and reservoirs have been designed so that an additional pipe may be laid without interrupting the supply. From the head works the water is conducted by means of a steel pipe from 35 to 42 inches in diameter, and 24 miles in length to the Mt. Tabor reservoir, and is carried thence through a cast-iron pipe 32 inches in diameter and six miles long to the city park reservoir, passing under the Willamette river with ball and socket joints by means of a cast-iron pipe 28 inches in diameter. The water falling from the high to the low service reservoir in the city park will be utilized to drive hydraulic pumps, which will supply Portland Heights and other elevated portions of the city. The water falling from the Mt. Tabor reservoir to the low service reservoir at the corner of Division and West avenues, could also be used to furnish power for pumping or electric lights. The power would be sufficient to furnish 100 arc lights at the city park and 80 at Mt. Tabor.

CAPACITY OF RESERVOIRS.

East Portland, No. 1, high service, est. . .	14,000,000 gals.
East Portland, No. 2, low service, est. . .	20,500,000 gals.
West Portland, No. 3, high service, est. . .	15,000,000 gals.
West Portland, No. 4, low service, est. . .	18,000,000 gals.
	<hr/> 67,500,000 gals.

COST OF WORKS.

Including hydraulic pumps and pipes for Portland Heights reservoir, and distribution pipes on the east and west side of river, bridges, steel and cast-iron pipe from headworks to city park, submerged pipes under the river, real estate, rights of way, telephone lines, legal and incidental expenses, the total expended to September 30, 1894, was		\$1,636,105
Estimated cost of completion		770,895
		<hr/> \$2,407,000

TIME OF COMPLETION.

The exact date when water will run into reservoirs and the mains is somewhat indefinite, but probably by January 1, 1895, the city will be using Bull Run water.

HOW THE WORKS WERE CONSTRUCTED AND SAFE-GUARDS AS TO INSPEC- TION OF CONTRACT WORK.

Specifications were made describing the works and time and method of payment, and were furnished to all desiring to bid. Bids were then asked for, after duly advertising for the same, and were opened in the presence of the bidders at the day, hour and place specified. Each bidder was required to endorse and deliver a certified check for a certain per cent. of his bid, as security for the faithful execution of the contract, and to furnish the required bonds in case the contract was awarded him. Ten per cent. was usually deducted from the monthly estimates as further security that the work would be completed according to contract. On the contracts for the steel, cast-iron and submerged pipes, the ten per cent. thus reserved is retained until six months after completion, during which time the contractors are required to keep the pipes in repair and turn them over in good condition.

The work is subject continually to a rigid inspection in the shops and field, reports being made by inspectors each month. The work, however, is not accepted until the expiration of a stipulated time after completion. The cement, gravel, stone, etc., is delivered at the reservoirs by wagon, the contents of each load being measured, and a receipt showing the quantity given the teamster ; the stubs of the receipts are turned over to a tally clerk, who enters them each day in a record book, from which, at the end of the month, an estimate is made by the assistant engineer, and by him forwarded to the chief engineer. We attach hereto abstract of proposals marked exhibit "B," which shows the various bids on different portions of the work.

We also hand with this report a copy of the specifications marked exhibit "C."

Mr. J. W. Cook, of this committee, made a personal examination of the entire work and of the materials used. His report is highly commendatory of the work done in every particular. It must be borne in mind that none of your committee claim to be experts, but a man of judgment should be able to tell whether the work was being done carefully, and the kind of material which was going into its construction. Mr. Cook retained specimens of various kinds of material to be shown if required. We attach hereto memorandum of report made by Mr. Cook, marked exhibit "4."

In presenting this report we are constantly impressed with a sense of a lack of technical knowledge to prepare a really valuable report, the only merit we claim being an honest desire to present the facts. It must be borne in mind that in passing upon this work we are going over that to which men of acknowledged ability and integrity have given years of thought, study and labor. It would be a depth of egotism which none of us have yet sounded, to place our immature opinion against carefully matured judgment on matters of policy and

carefully digested and prepared plans. A report of this nature must, therefore, necessarily deal with facts, and each person form their own conclusions as to the wisdom of the acts of the committee. The committee after due deliberation adopted and followed an acceptable plan. Millions of dollars have been spent, a great public work carried to completion ; no scandal exists ; no charges of mal-administration are made ; not even a hint of peculation is suggested. Only once has it been charged that politics has entered into anything the Water Committee did, and there would have been no ground for that charge had every member of the committee been as scrupulous as the majority in regarding their trust as one for all the people, without regard to their political faith, and it may be stated here that the charge, as far as the committee was concerned, was unfounded. The work of the committee is practically done. It must be judged by its works. The City of Portland will have a supply of water which for purity is probably unexcelled anywhere in the world. How much this will count for the future health and happiness of its citizens cannot be measured.

Without in any way retracting or modifying the opinion we have heretofore expressed as to the advisability of "commissions," yet in this particular instance we are free to say the only practical way of handling the water question was through a commission. It is perfectly evident that when a plan was once adopted it would have to be put through without constant changes, certainty was necessary. It was also infinitely better that (if honest and capable) the work should be carried on by men who were familiar with all its details. Its offices, functions and plans ought not to be the subject of caprice or whim. These results could only be obtained through a commission. However, the greatest praise which can be given the Water Committee is its severest condemnation, for it is unquestionably the

father of all commissions which have been created since, to divide the government of our city into as many independent heads as there are departments.

Before closing this portion of our report, we desire to publicly acknowledge the courteous treatment this committee has received at the hands of the chief engineer, clerk and other officials connected with the committee.

While we are called upon to report on the work of the Water Committee only, this report would be far from complete without reference to the systems on the east side of the river.

We will first report generally on the water systems of that part of the city formerly comprising East Portland.

On February 9, 1887, an Act was approved amending the Acts incorporating the City of East Portland, which gave the common council power and authority to provide the city with good and wholesome water. By an Act filed in the office of the Secretary of State, February 18, 1891, the City of East Portland was incorporated and the same Act repealed the other Acts incorporating the said city. Under this Act, by Section 121, the City of East Portland was empowered to construct or purchase, keep, operate and maintain water works and electric light works of a character and capacity sufficient to furnish the city and inhabitants thereof with an abundance of good and wholesome water and light for all uses and purposes necessary, etc. The power and authority given the city to construct and purchase water and electric light works and dispose of the bonds therefor, were to be exercised by the common council, but the power and authority given to maintain, operate and continue the construction of such works were to be exercised by three *bona fide* resident taxpayers of the City of East Portland, to be elected by the common council and to be styled collectively "The Water and Light Commission." This was

to commence when the purchase and construction of the water works or plant as provided for was completed, and was to expire on the first day of July, 1892, and it was then provided that at the said election held on the third Monday in June, 1892, there should be elected three water and light commissioners possessing the qualifications provided for, who should be elected by the qualified voters of the city, and whose terms of office were to commence the first Monday of July, 1892, expiring as follows : The first Monday in July, 1893, one first Monday in July, 1894, one first Monday in July, 1895. The respective terms were to be decided by lot. Thereafter one commissioner was to be elected each year for a term of three years. Other provisions relate to the organization of the commission, election by the council where a vacancy occurs, meetings, etc.

Section 130 provided for the issuance by the common council of bonds of the city running 30 years at six per cent., interest payable semi-annually in gold coin of the United States, the whole amount issued never to exceed the sum of \$250,000 water bonds, and \$50,000 light bonds. As soon as the funds were realized the common council were authorized to acquire a system of water works and light works of sufficient size and capacity to supply the demands of the city, etc., and thereupon to turn it over to the water and light commission who would then operate it. The other provisions were in effect the same as those of the law governing the Water Commission of Portland. The salary of the three commissioners were to be \$150 a year, and a \$15 city tax was prescribed as a minimum amount any one should pay to be eligible.

After the passage of the Act authorizing the issuance of the \$250,000 in bonds, East Portland purchased from the East Side Water Company its plant, in pursuance of a tacit agreement to this effect which had been entered into between the council and the gentlemen who formed

the company. The plant which had been acquired by the company prior to the purchase by East Portland, consisted of a tract of $3\frac{1}{10}$ acres on which they drove wells, erected buildings, pumps and machinery. They also laid about 12 miles of mains, and commenced to furnish water at, as we are informed, the same base rate as now charged.

On May 1, 1891, the bonds were issued and sold in the full amount authorized, to wit, \$250,000. They run for 30 years, draw six per cent., interest payable semi-annually, and were sold for par.

The original purchase price was

the sum of.....	\$95,108.90
Being a cash payment of... ..	\$49,684.50
Obligations assumed.....	<u>45,424.40</u> <u>\$95,108.90</u>

Shortly after this trade was consummated the Consolidation Act was passed, the City of Portland assuming the obligation and taking over the plant and the funds on hand. Since then the city, through a council committee, has operated the plant, and expended the proceeds of the bonds over and above the purchase price of the plant in extending the system to its present proportions. This committee is now composed of the following gentlemen: J. P. Menefee, chairman; D. W. Burnside and Thomas J. Jones. They hold two meetings a month, and exercise a general supervision over the entire work. Since the original purchase about 25 miles of mains have been purchased and laid, a stand pipe erected and two lots purchased. The plant consists at this date of pumping station, about $3\frac{1}{10}$ acres of ground, two pumps, seven wells, four boilers, steam condensers, etc., two lots 50x100 each in Irvington on which the stand pipe is erected, about 40 miles of mains varying in size from three to sixteen inches, the predominating size being four, six and eight inches. A large extent of territory is traversed; the northern boundary is supposed to be the old dividing line

between East Portland and Albina, a main runs, however, two-thirds of a mile north of that line; east the mains run in Irvington and Holladay's addition to Twenty-eighth street, and west to the river; Sunnyside is well covered and is probably the farthest eastern point; the mains run south to the city limits, and also to Waverly and East Portland heights. The territory comprised between Albina on the north, the old city limits before consolidation on the south, the river on the west, and the eastern boundary of Sunnyside on the east is fairly well covered. The total cost of the plant as it now stands is \$252,520.95.

CONSTRUCTION FUND EAST SIDE WATER WORKS.

Amount expended by East Portland before consolidation	\$129,962.67
City of Portland since consolidation	122,558.28
Total cost	<u>\$252,520.95</u>

RECEIPTS AND DISBURSEMENTS BY YEARS

Receipts, 1891	\$ 4,424.01
“ 1892	15,834.48
“ 1893	20,660.79
“ 1894, to Oct. 1, 1894.	<u>15,695.85</u>
	\$56,615.13

DISBURSEMENTS.

Operating expenses .....	.\$36,931.83
Construction fund	2,026.51
General fund	15,000.00
Balance on hand Oct. 1, 1894.	<u>2,656.79</u>
	\$56,615.13

COMPARATIVE TABLE OF RECEIPTS AND COST OF OPERATION.

	<i>Receipts.</i>	<i>Disbursements.</i>
Oct. 1, 1891, to Oct. 1, 1892.	\$14,815.58	\$11,198.94
Oct. 1, 1892, to Oct. 1, 1893.	19,351.92	11,997.58
Oct. 1, 1893, to Oct. 1, 1894.	<u>20,331.40</u>	<u>11,982.29</u>
	\$54,298.90	\$35,178.81

The annual interest charge is \$15,000, which, for the three years, would amount to \$45,000, from which it would appear the system is not earning interest on the bonds, but is running behind. In considering the earnings it must be borne in mind that the country traversed by the mains is not thickly settled, and an opposition company, the East Portland Water Company, is in the field covering much of the same thickly settled territory, and has, we are informed, nearly as many consumers as the city works.

The expenses of running the plant last month were \$816, made up of the following items :

Three engineers, eight hour shifts.....	\$240	
Eighty cords of wood at \$2.50.....	200	
Secretary, salary.....	100	
Inspector.....	60	
Superintendent of mains.....	75	
Incidentals.....	141	\$816

The receipts for the same month were \$1,761. The receipts for the summer months are increased by charges for irrigation. The rates are the same as charged by the Water Committee. The first year they had about 800 taps and upwards. Now they have about 1,400 and upwards.

Estimating seven persons to a tap, would make :

Consumers first year.....	5,600
Consumers now.....	9,800

The number of consumers is constantly increasing.

We could get no *data* as to the amount of water pumped, as no meter is connected with the pumps.

There is one large and one small pump. The former has a capacity of 3,000,000 gallons per day, and the small one 1,250,000. The supply is small, the entire system being supplied with the small pump, and it does not run to its full capacity. Two pumps are kept on hand in order to have a reserve in case of breakage, or the one in use getting out of order. The supply of water is insufficient for the demand, and the city main is

connected with the Albina company's main, by the aid of which a pressure of 100 pounds is maintained for fire purposes and to keep up supply. The city pays 3½ cents per thousand gallons to Albina company, and this year the city has paid for water thus far, \$780.75. Mr. E. J. Gray is superintendent of the mains, etc. There is no sinking fund provided for as yet.

The committee in charge of the works for the council are economizing in many directions. When they assumed control, July 1, 1894, the salary list of regular employees was \$575 per month ; since August 1, a reduction on this account of \$100 per month has been effected. By making a change in the machinery which cost \$53, eighty cords of wood are now burned per month, where formerly 100 to 110 cords were required.

We are under obligations to Mr. Roscoe R. Morrill, secretary of the east side plant, and to Mr. Gambell, city auditor, for *data* furnished as well as other assistance rendered.

ALBINA.

Under date of February 20, 1889, there was filed in the office of the Secretary of State, an amended charter of the City of Albina, under the provisions of which bonds to the amount of \$40,000 might be issued by the common council for the purpose of establishing and maintaining water works bearing six per cent. interest, payable semi-annually.

Nothing was done under this charter.

Under an Act filed in the office of the Secretary of State, February, 20, 1891, the common council of the City of Albina were given the power to construct or purchase, etc., water works of a character and capacity sufficient to furnish the city and inhabitants thereof with an abundance of wholesome water, and were authorized to acquire by purchase or otherwise, such real and personal property within and without the limits

STATEMENT

Of all the Earnings, Receipts and Disbursements by the Water Committee of the City of Portland, Oregon, and the Sub-Committee on Water Works, operating the works, from November 25, 1885, when the Committee was appointed by Act of the Legislature, until December 31, 1897.

EARNINGS AND RECEIPTS		1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	Totals	Totals	Grand Totals
Gross earnings of Water Works.....		\$.....	\$ 97,502.71	\$ 113,692.06	\$ 148,106.31	\$ 181,310.40	\$ 238,217.95	\$ 261,330.30	\$ 249,228.82	\$ 234,066.45	\$ 268,492.65	\$ 249,919.90	\$ 268,926.10	\$2,310,793.65	\$.....	\$.....
Deduct due from city for water for Fire Department, etc.....		.....	.....	.....	.....	.....	24,000.00	24,029.45	21,728.00	23,889.00	32,535.20	33,848.05	37,065.15	197,094.85	.....	.....
Cash receipts of Water Works.....		.....	97,502.71	113,692.06	148,106.31	181,310.40	214,217.95	237,300.85	227,504.82	210,177.45	235,957.45	216,071.85	231,860.95	.....	2,113,693.80	.....
Deduct operating expenses and repairs.....		.....	47,000.77	54,792.44	51,407.17	71,496.85	63,993.28	58,892.27	63,357.32	62,094.28	38,989.27	36,894.08	36,585.02	.....	585,392.75	.....
Deduct increase of property in hands of operating department.....		.....	50,501.94	58,899.62	96,699.14	109,813.55	150,224.67	178,468.58	164,143.50	148,083.17	197,018.18	179,177.77	195,275.93	.....	1,528,306.05	.....
Net income from Water Works .....		.....	3,277.31	3,170.03	322.98	8,515.49	2,928.36	1,400.13	3,594.91	6,924.66	325.70	12,177.77	13,840.71	.....	7,757.49	.....
Deduct interest on bonds.....		.....	47,224.63	55,729.59	94,376.16	101,298.06	147,293.31	177,068.45	167,733.41	155,007.83	196,692.48	167,000.00	209,116.64	.....	1,520,548.56	.....
Net earnings used for extending mains and construction.....		.....	25,000.00	25,000.00	30,000.00	33,750.00	35,000.00	32,000.00	40,449.50	87,938.37	139,986.30	145,000.00	145,000.00	.....	742,124.17	.....
Water bonds sold.....		.....	22,224.63	30,729.59	66,376.16	67,548.06	112,296.31	142,068.45	127,288.91	67,069.46	56,706.18	22,000.00	64,116.64	.....	778,424.39	.....
Premium on bonds .....		.....	.....	.....	100,000.00	100,000.00	.....	.....	450,000.00	1,450,000.00	300,000.00	.....	.....	2,900,000.00	.....	.....
Totals.....		.....	39,300.00	.....	5,908.20	9,750.00	.....	.....	135,742.50	39,000.00	.....	.....	.....	* 222,200.70	3,122,200.70	.....
Totals.....		539,300.00	22,224.63	30,729.59	172,284.36	177,298.06	112,296.31	142,068.45	* 569,788.91	1,652,811.96	395,706.18	22,000.00	64,116.64	.....	.....	3,900,625.09
DISBURSEMENTS																
Water Works purchased		464,551.81	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45,000.00	509,551.81	.....	.....
Additional pumps and main from Palatine .....		.....	.....	12,279.06	42,026.85	192,322.78	26,558.44	.....	.....	.....	.....	.....	.....	273,187.13	.....	.....
Deduct property sold		464,551.81	.....	12,279.06	42,026.85	192,322.78	26,558.44	.....	.....	.....	.....	1,685.00	45,000.00	782,738.94	.....	.....
Net cost of pumping system.....		.....	.....	1,500.00	100.00	16.00	834.48	300.00	125.00	.....	.....	.....	.....	4,560.48	.....	.....
Distribution system, extending mains...		464,551.81	33,939.71	10,779.06	41,926.85	192,306.78	25,723.96	105,464.97	15,843.88	151,033.66	61,659.90	5,035.58	45,000.00	.....	778,178.46	.....
BULL RUN GRAVITY SYSTEM		560.00	.....	14,273.49	114,068.46	7,856.54	54,377.08	.....	.....	.....	.....	.....	7,484.06	.....	571,617.33	.....
Surveys and explorations.....		7,850.73	.....	.....	426.00	.....	630.70	272.57	508.40	.....	.....	.....	3,423.46	9,688.40	.....	.....
Land, riparian rights and rights of way.....		936.85	.....	23,386.01	337.00	.....	12,820.73	1,213.35	1,744.80	5,278.75	613.00	1,385.90	.....	51,089.85	.....	.....
Clearing and roads		125.00	324.25	.....	.....	.....	41.60	16,574.09	15,649.71	331.70	.....	.....	.....	33,046.35	.....	.....
Head works on Bull Run river.....		7,180.10	2,409.89	1,500.00	.....	.....	.....	.....	36,406.98	8,656.17	253.00	749.78	.....	57,245.92	.....	.....
Steel plates for conduit, head works to Mt. Tabor, 24 miles .....		.....	.....	.....	.....	.....	.....	.....	169,883.29	208,675.69	16.00	.....	.....	377,312.30	.....	.....
Manufacturing and laying ditto.....		.....	.....	.....	.....	.....	.....	.....	218,528.79	296,447.87	2,245.36	52,723.70	.....	569,945.72	.....	.....
Bridges for conduit across Sandy and Bull Run rivers .....		.....	.....	.....	.....	.....	.....	.....	10,561.36	44,334.86	.....	10.00	.....	54,896.22	.....	.....
Manufacturing and laying cast iron conduit, Mt Tabor to Park, 6 miles ..		.....	.....	.....	.....	.....	.....	.....	357.35	261,051.42	27,179.93	.....	.....	288,588.70	.....	.....
Submerged pipe across Willamette river Reservoirs (4) including land.....		.....	.....	.....	579.76	.....	962.90	21,078.25	6,005	63,884.47	14,907.96	9,003.94	201.29	78,999.77	.....	.....
Portland Heights supply, water power pumps, etc.....		.....	.....	.....	.....	.....	.....	.....	41,369.73	678,134.29	122,568.09	.....	5,630.96	879,387.92	.....	.....
Telephone line to head works, 30 miles (General expenses		4,223.36	16,832.43	2,136.29	1,760.45	1,095.92	5,076.07	853.65	6,860.00	401.51	6,262.90	2,236.88	2,179.53	7,261.51	.....	.....
Totals		\$ 485,427.85	\$ 53,596.23	\$ 52,021.85	\$ 159,098.52	\$ 201,259.24	\$ 99,633.04	a \$145,156.88	a \$527,772.98	\$1,736,397.14	† \$257,192.04	a \$70,259.98	63,979.30	.....	\$3,851,798.10	.....

* After deducting from account "Premium on Bonds" \$7,500, being 2½ per cent discount on \$300,000 bonds sold in 1893.

+ After deducting from account "Steel Plates" \$1,262.68 for steel plates sold in 1895.

a After deducting from account "Water Works" amounts received for property sold as above.

b Add for decrease of property in hands of operating department.

Balance in the hands of Treasurer, December 31, 1897. Appropriated for construction during 1898:

Amounts invested are: \$778,178.46 for purchase of pumping systems and additions,

\$571,617.33 for extending distribution system, \$2,502,002.31 for Bull Run gravity system and \$48,826.99 balance, as above. Total.....

48,826.99

\$3,900,625.09

of the city as might be necessary and convenient, and were authorized also to issue bonds to the extent of \$40.000, to be signed by the mayor and countersigned by the police judge. The time of the payment of the bonds was not fixed. The council was given the authority to set the time of the payment of each bond, said bonds to bear interest at the rate of five per cent., payable semi-annually.

The City of Albina did not issue the bonds provided for, but its inhabitants are supplied by the Albina Light and Water Company, a private corporation. Its plant consists of four twelve-inch artesian wells situated near the river. It has three pumps with a total capacity of four million gallons per day. The present consumption is about one million gallons per day, which is increased in the summer time to about one and one-half million gallons per day. There are about 30 miles of mains and 1,600 taps, making number of consumers, on *ratio* used in this report, 11,200. The same base rate is charged as on the west side. The city is charged \$5 per month for each hydrant, and pays it. The cost of operation, earnings, etc., we are unable to get, but understand it is well managed and is a profitable enterprise.

This covers, in a general way, the present mode of supply of that part of the territory of the consolidated city, formerly known as Portland, East Portland and Albina.

In conclusion, we would say that it is very difficult to give in a report any adequate conception of the work done, the difficulties encountered and the obstacles surmounted.

In a work of this kind, much of which was necessarily done by contract, which, in some instances, was sublet and re-sublet, the utmost watchfulness and care was required. Bills for extra work had to be closely scanned. The inspection had to be inspection or the city suffer for years. The appointments had to be carefully made, even when recommended, in order to keep

the work out of politics. That this was accomplished as well as it has been, is a matter of congratulation, and this result has only been obtained by the unselfish and dignified stand taken by the great majority of the committee. The exact purpose of changing some of the committee by the legislature, is not clear. The gentlemen displaced were valuable members who had been painstaking and earnest in their work. This is not intended as a reflection on the new members, but there has always been a well settled opinion that they were removed by the legislature on political grounds.

In approving the policy of having a commission to do the work, we do not wish to be understood as approving the policy of creating any self-perpetuating body. We can conceive of no principle carrying with it greater danger than this theory. If the city should have a corrupt body thus created, no limit could be set to the damage which might be done.

As a result of our investigation we would suggest that at least a majority of the present committee be retained to complete the work, and would further recommend that no salaries or other compensation be paid the commissioners.

It would be unjust to single out any particular member of the committee for either special approbation or condemnation, but we feel we are violating none of the proprieties when we say it is a matter of regret that Mr. W. S. Ladd did not live to see the great work accomplished, to which he gave so much of his time, thought and labor. As an active worker on the committee his services will always be appreciated by his associates and the public.

In finally closing this report we would say that we have approached the subject in a spirit of fairness and justness to all concerned, and presume it will be conceded that in a work of this magnitude, things have been done which, in the light of experience gained by

actual work, would not have been done ; mistakes may have been, and probably were, made, but taking into consideration the amount of work done, we believe it would be difficult to find any public or private enterprise which will show a cleaner administration and give less opportunity for adverse criticism than that done by this committee. We have heretofore patiently and carefully examined all the particular matters to which our attention was directed, and have reported on the same from time to time. We do not feel called upon to express any opinion as to the merits of the Bull Run plan as against the river, as this question, so far as the public is concerned, is settled. We admit the long delay in filing this report, but if you will consider the labor involved in preparing a report of this character so as to make it intelligible, and the further fact that the work was not completed, we feel that we are not censurable.

Respectfully submitted,

[Signed,] J. N. TEAL, *Chairman*.

[Signed,] J. W. COOK.

Dated, December 1, 1894.

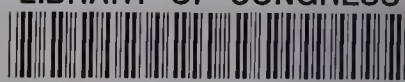
EXHIBIT A.

Statement of all the receipts, earnings and disbursements by the Water Committee of the City of Portland, Oregon, and the sub-committee on water works, operating the works, from November 25, 1885, when the committee was appointed by act of Legislature, until December 31, 1893:

	1886	1887	1888	1889	1890	1891	1892	1893	TOTALS.	GRAND TOTAL.
<i>Receipts and Earnings:</i>										
Water bonds sold	\$500,000.00			\$100,000.00	\$100,000.00			\$450,000.00	\$1,150,000.00	
Premium on bond	39,300.00			5,908.20	9,750.00				*47,458.20	
Property sold		\$ 97,502.71	1,500.00	100.00	16.00	834.48	\$ 300.00	125.00	2,875.48	
Gross earnings of water works.....			113,692.06	148,106 31	181,310.40	238,217.95	261,330.30	249 228.82	1,289,388.55	
Deduct amounts due from city.....						\$239,052.43	\$261,630.30	\$699,353.82	\$2,489,722.23	
Totals.....	\$539,300.00	\$ 97 502.71	\$115,192.06	\$254,114.51	\$291,076.40	\$215,052.43	\$24,029.45	21,728.00	69,757.45	
<i>Disbursements:</i>										
Water works purchased Dec. 31, '86.	\$464,551.81								\$ 464,551.81	
Operating expenses and repairs.....		\$ 47,000.77	\$ 54,792.44	\$ 51,407.17	\$ 71,496.85	\$ 63,993 28	\$ 58,832.27	\$ 63 357 32	410,880.10	
Interest on bonds, 5 per cent.....		25,000.00	25,000 00	30,000 00	33,750 00	35,000.00	35,000.00	**40,449.50	224,199.50	
Additional pumps, mains, Palatine...			12,279.06	42,026.85	192,322.78	26,558.44			273,187.13	
Mains for distributing system in city,	560.00	33,939.71	14,273.49	114,068.46	7,856.54	54,377.08	105,464.97	15,843.88	246,384.13	
Surveys and explorations.....	7,850.73			426.00		630.70	272.57	508.40	9,688.40	
Land, riparian rights, etc.....	936.85			337.00		12,820.73	1,213.35	1,744.80	40,388.74	
Clearing and roads.....	125.00	324.25	23,336.01			41.60	14,574.09	15,649.71	32,714.65	
Headworks, Bull Run river.....	7,180.10	2,499 89	1,500.00					36,406.98	47,586.97	
Plates for conduit to Mount Tabor....								169,883.29	169,883.29	
Manufactur'g and laying steel conduit								218,528.79	218,528.79	
Bridges for same.....								10,551.36	10,551.36	
Telephone to head works, 30 miles...								6,860.00	6,860.00	
Reservoirs, cost land, excavating.....								41,369.73	63 990.64	
Legal and general expenses, etc	4,223.36	16,832.43	2,136.29	1,760 45	1,095.92	5,076.07	853.65	10,551 04	42,529 21	
Totals.....	\$485,427.85	\$125,597 05	\$133,317.29	\$240,605.69	\$306,522.69	\$199,460.80	\$239,289.15	\$631,704.80	\$2,361,924.72	
Add fuel, material, tools, etc., in hands of operating department on December 31, 1893..									16,019.39	\$2,377,944.11
Balance in hands of the treasurer of the Water Committee of the City of Portland, Oregon, December 31, 1893.....										\$42,020.67

*After deducting from \$54,958.20, heretofore standing to the credit of premium on bonds, \$7,500 being 2½ per cent. discount on \$300,000 of the bonds sold in 1893. **After deducting from \$46,250, deposited with city treasurer for paying interest for 1893, \$5,800.50 being accrued interest on \$450,000 bonds sold in 1893.

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